



sem

W25T

**W25T
CONTROLLER
FOR SELF-FILLING
WATER STATION**

Programming Guide

SMART MONEY SYSTEMS

www.sem.ca

Introduction

Thank you for purchasing the W25T Water Controller.

The W25T Water Controller encompasses all the latest features of the vending industries such as the DEX port and dual cashless MDB port allowing connecting both a credit/debit card reader and a proprietary prepaid card system in addition to a bill reader, and of course a coin changer. This allows as well to revalue the prepaid card using credit card, coins, or bills. It can also work with a coin acceptor only configuration when giving back change is not required.

The W25T is easy to install and program. This manual covers mainly the programming aspect of the W25T. The large 2x20 LCD display is capable of displaying in English or French but not both. The entire programming of the W25T is achieved by using the lighted selection buttons on the selection panel of the machine.

The next pages will guide you step-by-step through the many features of the W25T. An illustrated flow chart makes navigating through the different parameters a very easy thing.

Operating principle

The W25T Controller delivers water in two different manners: 1- On a time basis; 2 - On a volume basis.

The time basis is used when the flow of water is continuous and with steady water pressure. If the flow is not continuous or if the water pressure is not steady, this will result in inconsistent quantity of water from one delivery to the other. The only way to ensure a steady volume of water from one delivery to the other is by using a water flow meter.

The W25T allows the use of the following payment peripherals: Coin acceptor only (no change given back), coin changer (from a 3-tube up to a 6-tube of change), bill acceptor, one or two cashless devices (credit/debit, prepaid, RFID, on-line-off-line, etc.).

The W25T offers 4 different preset water quantities at four different prices. Both the water level and the price are of course programmable. Once you have inserted sufficient credit, you can select the format of container you wish to fill. If the vend price of the chosen format is higher than the amount inserted, the green Start button will stay OFF. If the vend price of the chosen format is equal or lower than the amount inserted, the green Start button will activate waiting for the customer to start filling the container. Once the vend process starts, the W25T immediately starts giving change back if needed or concludes the transaction to the card reader, no matter how long it takes to fill the container.

The large LCD display prompts a multitude of messages to the customer such as the vend price, format chosen, low-change situation, and much more.



Component identification

The image below shows a typical water filling station equipped with our W25T Controller. Yours may differ. On the right side of the machine is the control panel with its:

- A: 2x20 giant LCD display (smaller size display available)
- B: Coin insertion slot & coin return button (escrow)
- C: Combined bill acceptor & credit/debit card reader
- D: Selection buttons
- E: Proprietary prepaid magnetic card reader with its own display



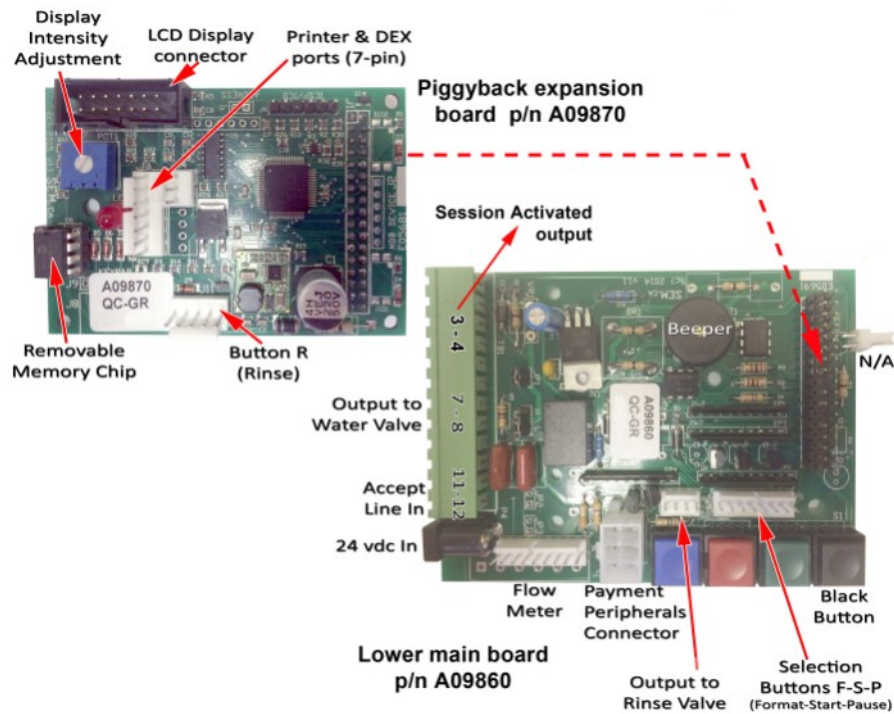
Note that elements C and E can have their respective position swapped if needed and can also be different than those shown here.

Circuit description

The circuit W25T is the brain of the machine. It controls the quantity of water sold, the vend prices, the different payment peripherals, and keeps track of the sales done. The W25T is actually two circuit boards mounted on each other. Most of the wiring of the machine goes to or comes from the W25T.

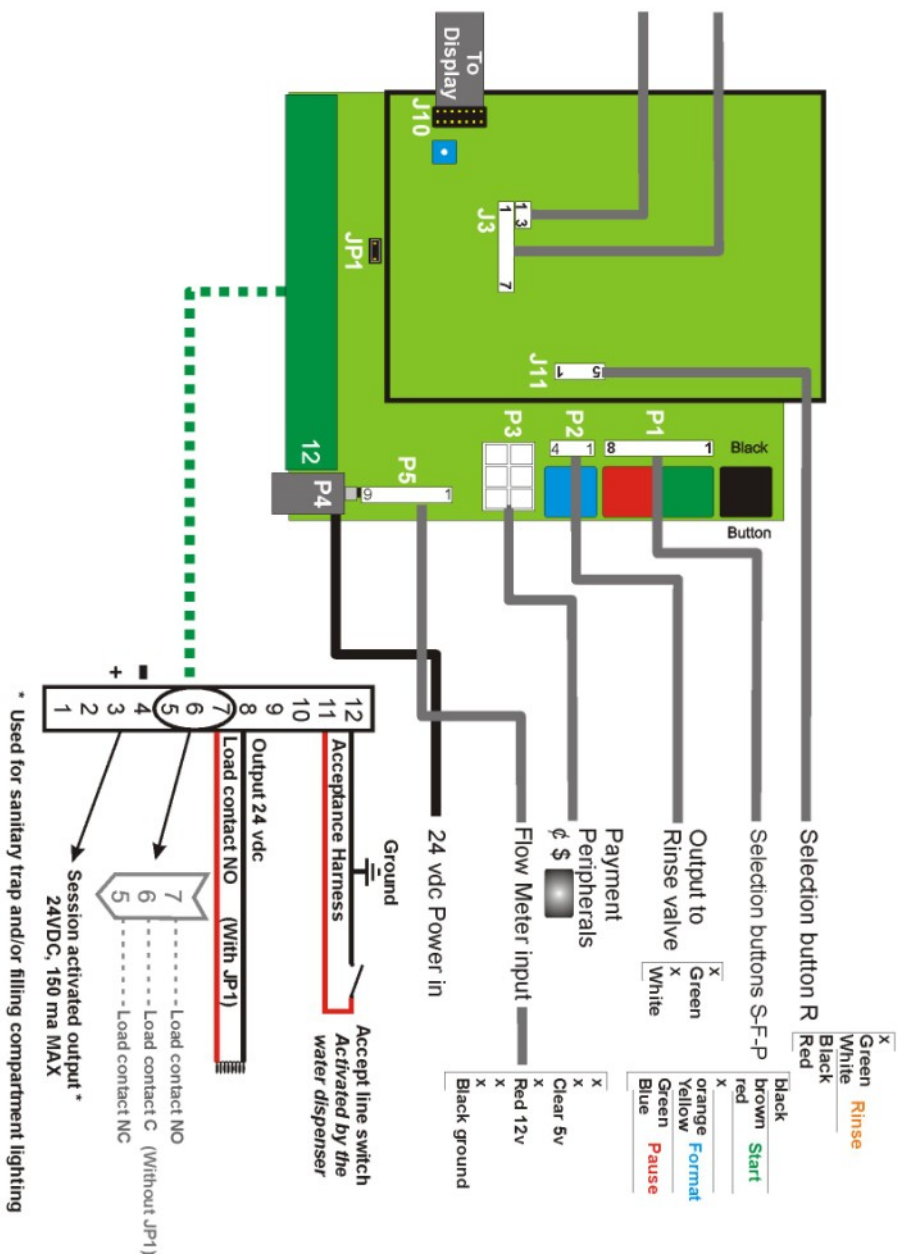
The lower board is part number A09860.
The piggyback expansion board is part number A09870.

One cannot work without the other.



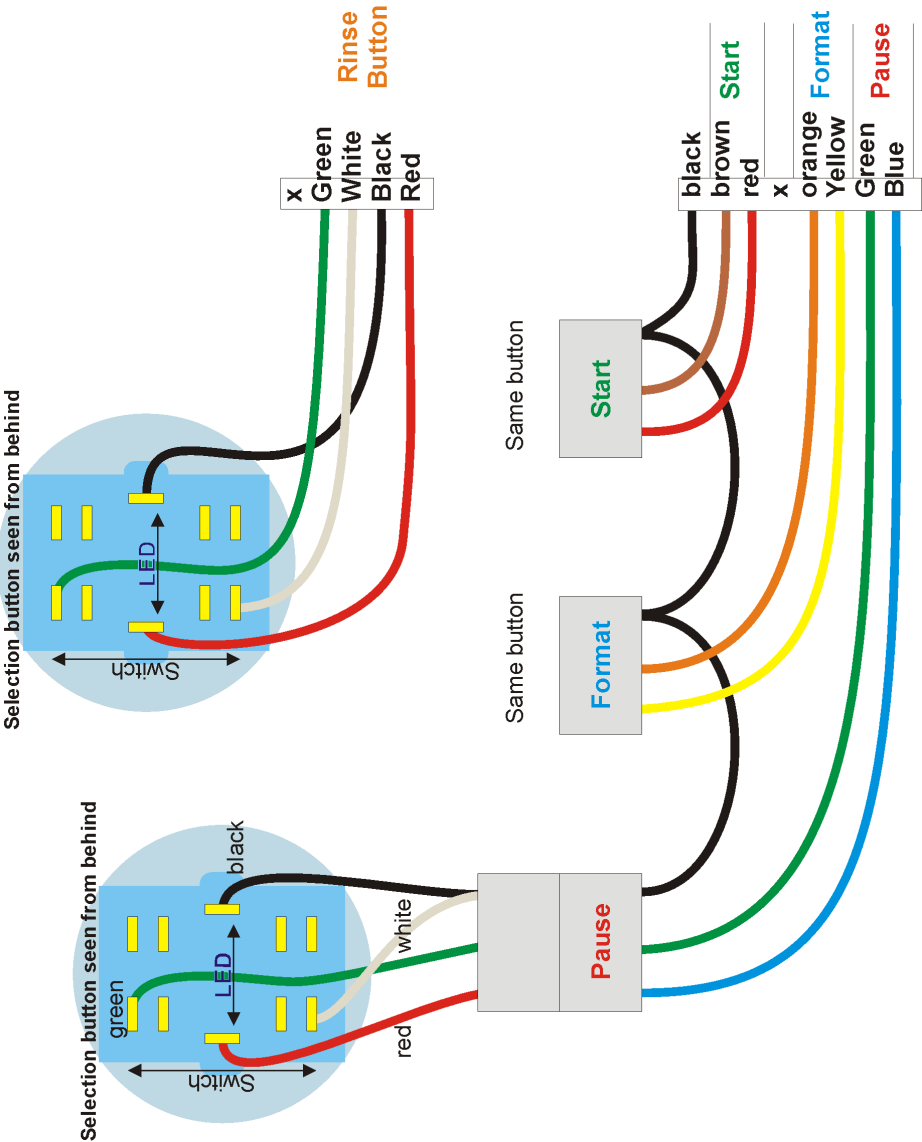
Wiring Diagram

Standard wiring of the W25T Controller..



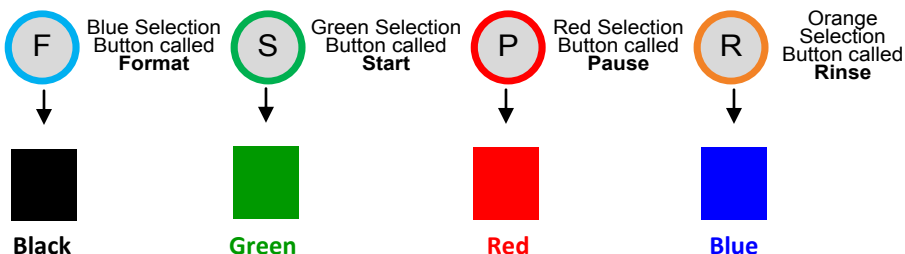
Wiring Diagram

Standard wiring of the W25T Selection buttons. Note that the only difference between the Start, Format, and Pause buttons is the color of the LED inside.



Navigating in the program

Navigating in the program, be it the different settings or the audit, is done using the selection buttons in front of the machine. This manual was written using a machine equipped with four buttons (F, S, P, R). Some machines may have only two buttons. In such a case, the programming is done using the square buttons located on the W25T circuit board.



In any case, accessing the different settings and information is done using the **BLACK** push button **ON THE CIRCUIT** inside the machine (see image pages 5 & 6). Once in, you then use the selection buttons to navigate.

There are two (e) different menus which are:

- Operator menu
- Technician menu

If you are the owner of the machine and do not want your employees to access the Technician menu, keep this manual in an inaccessible place as the following pages indicates how to access this menu.

The Operator menu divides in three sub-sections which are:

- Audit:** Gives you the entire monetary activities of the the machine.
- Currency Settings:** This is where you will decide what are the coins and bills you accept.
- Vend Price Settings:** This is where you will set the four potential vend prices.

The Technician menu consists of:

- System settings:** Allows for setting the multiple parameters of the machine.

Accessing the Operator Menu is done by pressing once on the **Black** button of the W25T circuit board.

 Blue Selection
Button called **Format**
 Green Selection
Button called **Start**
 Red Selection
Button called **Pause**
 Orange Selection
Button called **Rinse**

The Audit

The W25T offers a full audit of the transactions done by the machine plus the current state of the tubes inventory. The information available varies substantially depending on the payment peripherals present in the machine. For example, if your machine does not have any card reader, there will be no mention at all of cashless sales or revalues. The description below is based on a machine having all potential payment peripherals installed, including two cashless devices.

| | |
|------------------------|---|
| Tube inventory: | Current value of the coins present in each tube. (5¢ - 10¢ - 25¢ - 100¢ - 200¢) |
| Coin box: | Current value of the coins in the box since last reset. |
| Bill box: | Current value of the bills in the cassette since last reset. |
| Cash sales: | Sales done using cash since last reset. |
| Cash sales cum.: | Sales done using cash since day one (not resettable). |
| Cashless 1 sales: | Sales done using the first card reader since last reset. |
| Cashless 1 cum.: | Sales done using the first card reader since day one. |
| Cashless 2 sales: | Sales done using the second card reader since last reset. |
| Cashless 2 cum.: | Sales done using the second card reader since day one. |
| Total sales: | Total sales, cash + card 1 + card 2 since last reset. |
| Total sales cum.: | Total sales, cash + card 1 + card 2 since last day one. |
| Sales with token: | Value of sales done with a token since last reset. |
| Sales with token cum.: | Value of sales done with a token since day one. |
| Revalue from cash: | Money added to cards using cash since last reset. |
| Revalue f cash cum.: | Money added to cards using cash since last day one. |
| Revalue from card: | Money added to cards using card since last reset. |
| Revalue f card cum.: | Money added to cards using card since last day one. |
| Format 1: | Total of litres sold from Format 1 since last reset. |
| Format 1 cum.: | Total of litres sold from Format 1 since day one. |
| Format 2: | Total of litres sold from Format 2 since last reset. |
| Format 2 cum.: | Total of litres sold from Format 2 since day one. |
| Format 3: | Total of litres sold from Format 3 since last reset. |
| Format 3 cum.: | Total of litres sold from Format 3 since day one. |
| Format 4: | Total of litres sold from Format 4 since last reset. |
| Format 4 cum.: | Total of litres sold from Format 4 since day one. |
| Number of rinse: | Total of rinse cycle since last reset. |
| Number of rinse cum.: | Total of rinse cycle since last day one. |

Again, the information above will vary depending the payment peripherals connected into your machine.

If you have a serial printer attached to the W25T, pressing and holding the Green button at any time while in the audit will send the entire audit to the printer.

Once you have gone through the entire audit description (or printed it), the display will prompt you the following message: **Reset meters? Hold RED button.** By pressing the red button for at least 2 seconds, all non-cumulative meters will be erased. There is no way to erase the cumulative meters.

DEX transfer

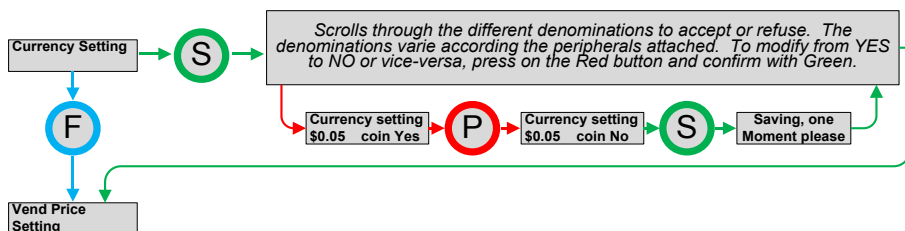
The DEX transfer is still under construction at the time of printing this manual.

Currency Settings

The W25T Water Controller uses the universal and international MDB protocol used in the entire vending machine industry and one of the features of that protocol is allowing what currency you wish to accept and those you wish to reject.

The description of different currencies will vary depending the peripherals connected to the W25T and the country of origin of the peripherals. On power up, the different peripherals connected will signal to the W25T their presence obviously plus their internal configuration.

When you see Currency Setting on the display, press on Start button. The first currency will most likely be \$0.05 with the mention YES beside it. Press the Pause button to toggle between YES and NO and confirm with Start. You will have confirmation of the new setting on the display before it passes to the next currency.



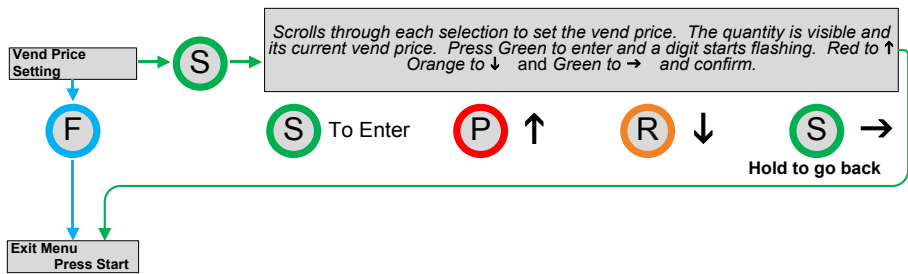
In Canada, the usual currencies will be: 5¢, 10¢, 25¢, 100¢, 200¢, 5\$, 10\$, and 20\$. In USA it will be 5¢, 10¢, 25¢, 100¢, 1\$, 5\$, 10\$, and 20\$. In Mexico it will be 50¢, 100¢, 200¢, 500¢, 1000¢, 20\$, 50\$, and 100\$.

If you do not see a currency on the display it is because the peripheral simply does not accept it (i.e. 50\$ & 100\$ CAD).

Vend Price Setting

The W25T Water Controller offers four selections, each of them having its own value. This is where you will assign the price to each of the four selections.

When Vend Price Setting is visible on the display, press on the Start button. The display will show Format 1 and its current price. Press on the Start button and the first digit to the left will start blinking. Press on Pause button to increase the digit or Rinse to decrease the digit. It wraps around. If you are at 1 and wish to go to 9, it will be faster to decrease rather than increasing. Once the proper digit value reached, press on Start button to move to the next digit. Pressing and holding the Start button will take you back to the previous digit. Repeat for all four digits and confirm the new price with the same Start button.



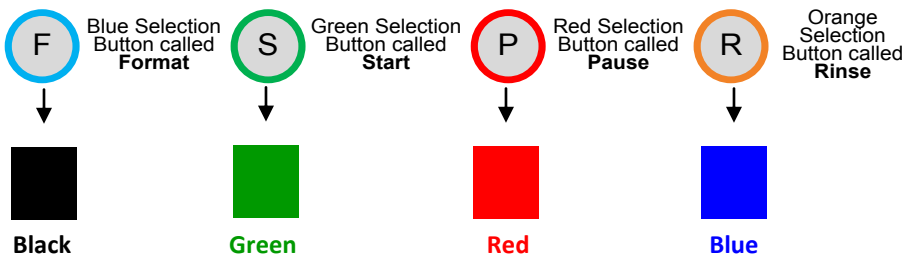
Repeat the process for all four formats.

Once all this done, the display will prompt: **Exit Menu Press Start.** Pressing start will take you out. Pressing Format will take you back up to Audit.

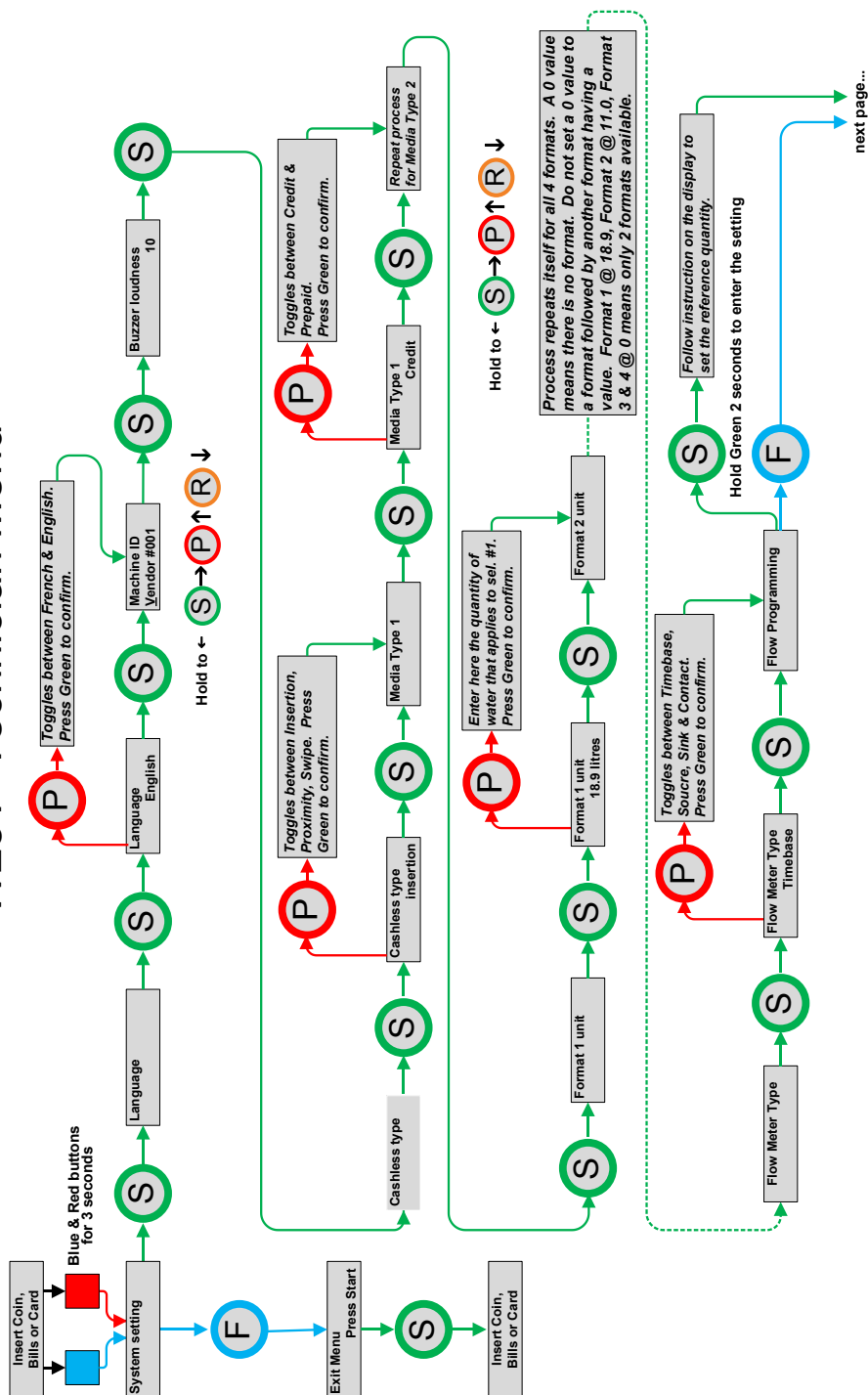
The Technician Menu

Accessing the Technician Menu cannot be accidental. We don't want anyone to access this section without knowing what they do. If you do not want this to be accessible to your employees, keep this manual in a safe place. You access the Technician Menu by pressing AND holding the blue and red buttons on the W25Tcircuit for about 3 seconds.

Reminder. You can use also the square buttons on the circuit board itself to program your machine.



W25T Technician Menu



System Settings

Below is an explanation of each parameters.

In all cases, pressing on the Start button when a parameter is on the display will allow you to enter it and see the current setting. Pressing on the Pause button will modify the setting. Pressing on Start again will confirm the new setting, or move to the next digit when the setting has letters or numbers.

Language

The W25T can display in English or in French but not in both simultaneously.

Machine ID

You can assign a specific Alpha-Numeric ID to your machine. You can set something like **Vendor 1** or **Machine B-2**. This ID will figure at the top of all print out from the machine or at the top of the DEX transfer. You can use either the Pause or Rinse button to reach your choice of character. Almost the entire ASCII set of characters is available.

Beeper loudness

There is a setting for the beep level between 1 and 10. Take into consideration that normally, the back door of the machine is closed so you may set it at a proper level so that it can be heard clearly by a customer in front of the machine.

Cashless message

If you are using a cashless system on your W25T, you can adapt the message on the display to match the style of reader you have. It can be **Insertion**, **Swipe**, or **Proximity**. The message will then be *Insert*, *Swipe*, or *Present your card* on the display.

Cashless 1 (with cashless licence 1)

Cashless 1 is the first cashless address. Take note that there is a possibility of two cashless devices on the W25T when delivered with the optional version. For any proprietary cashless system, set this parameter to **Prepaid**. For a Credit/Debit online system, set this parameter to **Credit**. The card reader itself must be able to work on either on cashless address #1 or #2 and that it allows you to change that address into the internal settings of the reader.

Cashless 2 (with cashless licence 2)

With the cashless licence 2 activated, the W25T can manage two cashless systems on the MDB port. To do so, one system is on address 1 (standard on any cashless system) and the other on address 2. You must also set the type of your cashless 2 to either **Prepaid** or **Credit**. The card reader itself must be able to work on either on cashless address #1 or #2 and that it allows you to change that address into the internal settings of the reader.

Card Revalue Limit

If you have a prepaid cashless system, it is possible to revalue the user card with the help of the other payment peripherals connected to the MDB port. Those other peripherals are the coin acceptor, the bill acceptor and the credit/debit card system. The limit must always be inferior by \$20 of the same set-up in the prepaid cashless system. If the maximum card value in the prepaid system is set to \$50, the card revalue limit must not be higher than \$30 so that it does not go over the \$50 limit in the case someone inserts a \$20-bill.

To revalue a prepaid card, the customer simply inserts his prepaid card into the reader and then adds money. Once done, simply eject the prepaid card. All money inserted is now encoded on the card.

Card to card

If you have both a credit card and a prepaid card readers on the machine, it is possible to add money to the prepaid card using the credit card.

To revalue a prepaid card, the customer simply inserts his prepaid card into the reader and then swipe or present his credit card to the other reader. Once done, simply eject the prepaid card. The preauthorized credit card amount is now encoded on the prepaid card.

Format 1 to 4

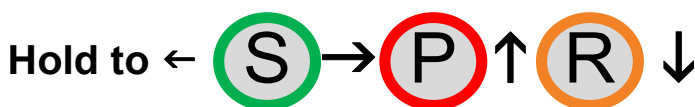
The details below refers to a machine set in litres. The US gallon version is available on request.

Format 1 to 4 refers to the four different volumes of water you can sell. Normally, you would put the highest volume in selection 1 and the lowest at format 4 as seen below:

- Format 1: 18.9 litres
- Format 2: 11.0 litres
- Format 3: 4.0 litres
- Format 4: 1.0 litre

DO NOT set a value to a format if you do not want to offer this choice to your customer. Using the example above, if you do not offer the 1 litre volume, set it at 0.0. Doing so, will transform your machine from a 4-selection to a 3-selection. Furthermore, if you reverse the example above, meaning 1.0, 4.0, 11.0, and 18.9, the first choice to the customer when he inserts money will be Format 1 @ 1.0 litre forcing the majority of customers who are buying the 18.9 litres format to press four times on the blue format button. Do not set a format at 0.0 followed by another format with a value (i.e. Format 1 @ 18.9; Format 2 @ 0.0; format 3 @ 4.0 litres).

Use the same combination of selection buttons to enter and modify the different values.



Flow Meter Type

Flow Meter Type is an important parameter. This is where you instruct the W25T on what basis the volume of water is sold. You have two ways and one of those divides in two categories.

The different choices are:

- Time basis
- Source (with a flow meter)
- Sink (with a flow meter)

Time basis

The name says it all. If you work on a time basis, it means the W25T will energize the water delivery valve for a period of time **t**. Once that time limit reached, the valve closes. Using the time basis requires your machine to have a very steady water pressure. If you have variations of your water pressure, the volume of water delivered will fluctuate and your customer will complain.

Sink and Source

Sink and Source refer to a flow meter. A flow meter will ensure the proper volume of water dispensed and the water pressure will have no effect on the volume sold. Most flow meter requires Sink. Please refer to SEM about this setting depending your flow meter type.

Flow Programming

This is where you will establish your reference quantity of water for the system. This is an important parameter.

We have set a protection preventing accidental access to this parameter. To access it, you must **press and hold** the Start button for at least two seconds. Once you are in this parameter, simply follow the instructions on the display. It consists in filling up your biggest container of water which will be used as your reference volume. Press and hold the Start button until the container is full. Try not to release the button during filling. The display will show you the quantity of pulses the flow meter is sending to the W25T. Once the proper level reached, press on the Pause (stop) button.

Restart Mode

As your customer can press on the Pause button at anytime during the filling a container, you can decide if you want to force your customer to keep the Start button depressed for the rest of the filling or if they can simply press once and let it go until it reaches the final level of water. Just select YES or NO.

Maximum pause time

If a customer presses on pause while filling, the system will wait for the number of minutes you decide here. If you set 2 minutes, the system will start flashing the last 30 seconds of that delay and show a visible countdown on the display asking the customer what is his intention. If the customer presses on Start, water will start flowing. If he presses on Pause, the pause time will reset. If the customer does nothing, the session will stop at the end of the countdown and the remaining volume of water to deliver will be lost.

Message Welcome

Welcome Message is a parameter allowing you to create your own message on the display that will alternate between ***Insert coins, bills, card*** and your own two-line message.

Two lines of 20 characters are at your disposal. That includes the spaces. Here is an example of message:

***** Welcome to *****

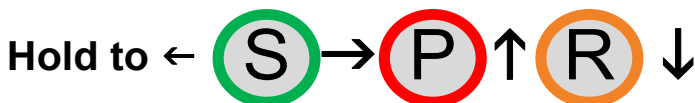
18 characters

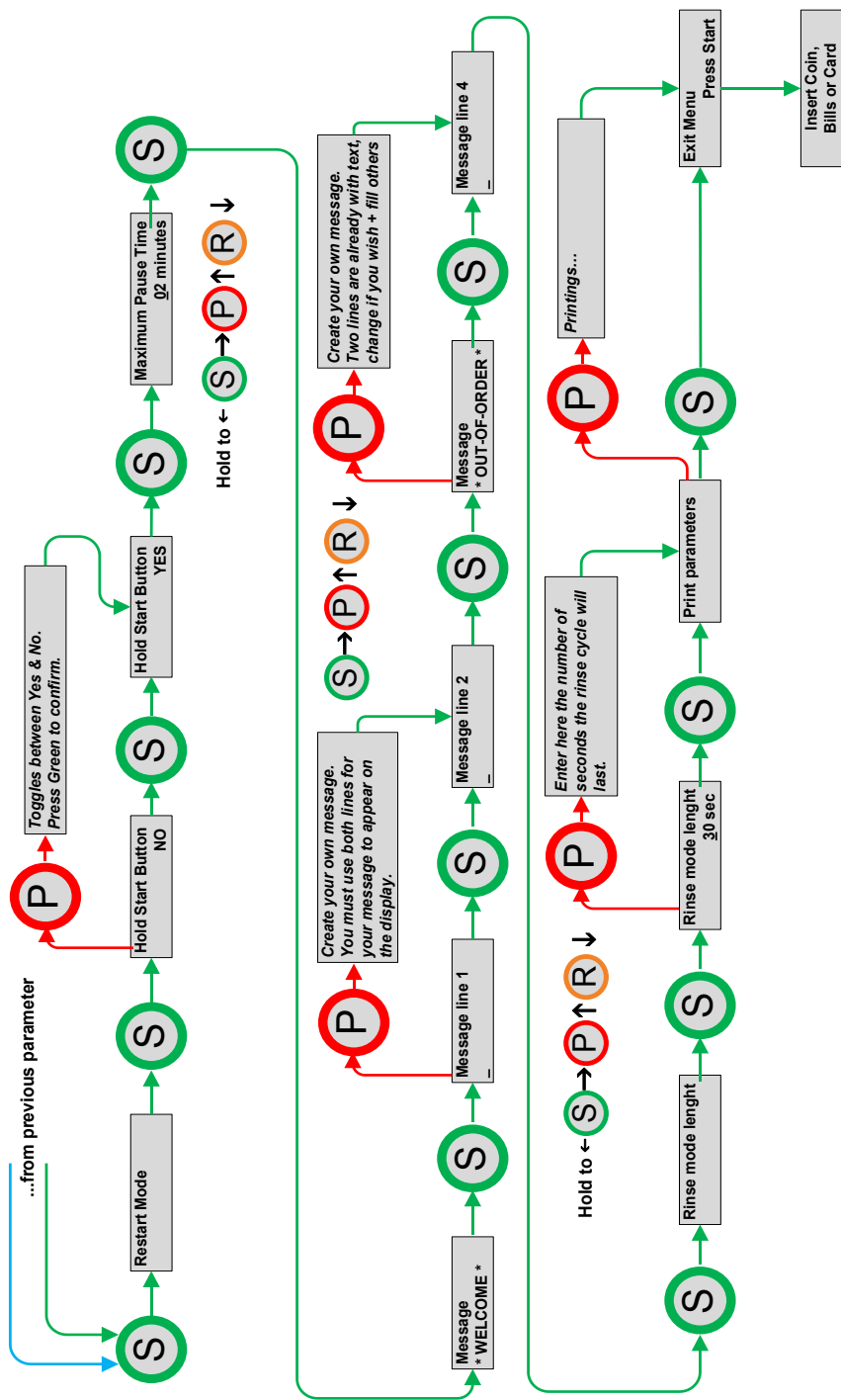
-The Water Boutique-

20 characters

The message will NOT self-centre. Therefore, you need to calculate the characters adequately. The list of characters includes different signs, lower-case and higher-case letters as well as letters with accent like à and é.

Use those buttons to select the letters you need. To enter a space, press P & R together.





Last Service

That feature allows you to indicate when was the last service to the machine as seen below.

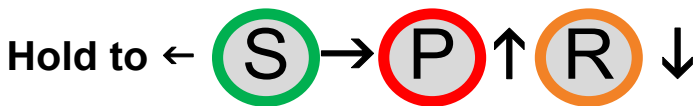


Message Out-of-Order

The Out-of-Order messages gives you 4 lines of 20 characters. Two lines already have a default message. Two lines are available for your own message. However, the first two lines can also be modified to your own message if you wish. Use the same buttons to create your own message.

***** PLEASE CALL *****
19 characters

**** 1-888-123-4567 ****
20 characters



Rinse mode length

If you offer the rinse option before filling, you can set the time this rinse will last. The Rinse period will only be available if someone inserts money in the machine and be repeated if the customer wishes. Rinse in free.

Print parameters

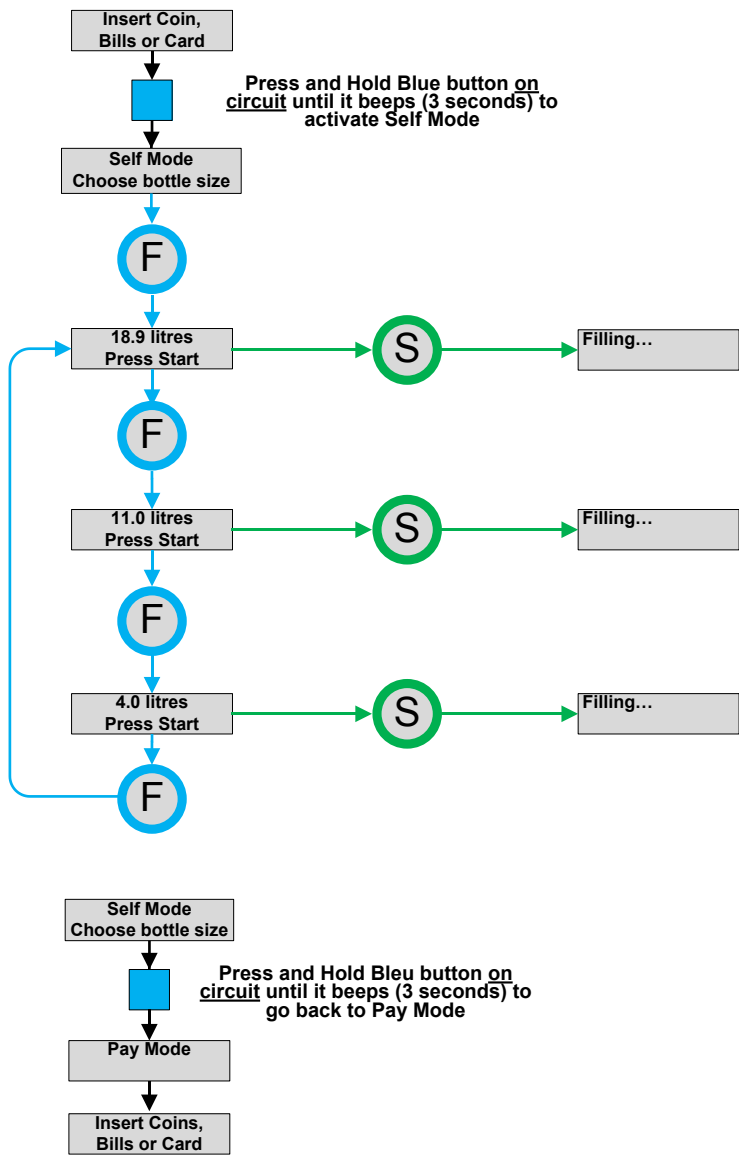
If you have the small optional portable serial printer connected to the W25T, you can print all the parameters you just programmed for reviewing. Very useful feature is you have many machines to program with the same parameters.

This concludes the different settings you have to do at the time of printing (December 2018) of this manual. Future firmware version may contain added or modified features and even additional pages.

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Self Mode

You can put the entire machine to give water without requesting immediate payment. Accessing the Self Mode cannot be accidental. Press and hold the blue button on the W25T for about 3 seconds (until it beeps). The machine gives free access. The display prompts **Self Mode Choose bottle size**. To remove the Self Mode, meaning going back to paying mode, press and hold that same blue button. The display will prompt **Pay Mode** briefly before displaying Insert Coin.



Servicing

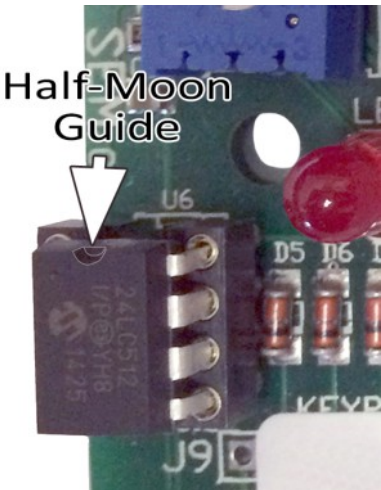
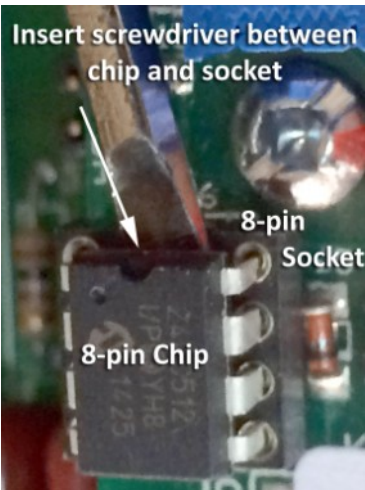
The W25T is designed and manufactured with the utmost care and attention. However, a problem can eventually require a circuit replacement. If this happens, you will greatly appreciate the fact that the entire memory of the W25T, including the entire audit and all the different settings are stored in a removable chip you can move to the new W25T circuit. No need to reprogram all the settings in the new circuit board and no loss of information on sales.

Upper section of the W25T



Removable
Memory Chip

It is important to insert the chip carefully in the proper position. There is a half-moon guide on the chip itself as seen below. This guide must face the square blue LCD adjustment potentiometer. **This must be achieved WITHOUT POWER on the circuit.**



Tube inventory

The tube inventory visible on the display comes from the information sent by the coin changer. This may vary depending the coin changer you have.

If you have an MDB Level 2 coin changer (3-tube or 4-tube), the inventory sent by the coin changer to the W25T is very limited. There are only two coin level sensors in each tube: Low & High. Between that, the coin changer does not know how much coins there are in the tube. It is then important to fill up the coin tube the proper manner. If you need, you can adjust this inventory manually. When you see a tube value on the display, press on the green button. First digit will start flashing. Adjust the number using either the red or blue button. Press green to switch digit. Once done, press green to confirm the new value.

If you have an MDB Level 3 coin changer (MEI 5-tube or Coinco 6-tube), the tube inventory is managed in real-time. The coin changer knows exactly how much money there is in the tubes, no matter their respective level. When you have such a coin changer, you cannot adjust the inventory manually like described in the previous paragraph.

Filling up the coin tubes.

The easiest way to fill up the coin tubes of your changer is to do as follow:

1. Go in the audit
2. When a tube value is visible, insert money just like a customer does.
3. Once done, **press and hold the black button on the circuit to exit.**

Filling the coin tubes this way serves two purposes: First, it adjusts the coin inventory in the audit. Second, you are testing the coin acceptance.

All coin changers give full priority to filling up the coin tubes. Only what is in excess will be diverted to the coin box. Note that some types of coin changers allow you to preset a value or a coin level in the tubes. Please consult the instruction manual of the coin changer to set such a value or coin level. The W25T has no control whatsoever on the coin level in the tubes.

SEM INC. – WARRANTY AND LIABILITY CONTRACT

By issuing a Purchase Order or contracting with SEM Inc. to carry out the supply of products, clients are accepting the terms of this Warranty and Liability Contract.

SEM Inc. warrants all parts of new equipment for one (1) year, from date of invoice against DEFECTIVE MATERIAL OR WORKMANSHIP, but not against damage caused by accident, abuse, vandalism, or improper operation and installation.

SEM Inc. shall not be liable for any direct, indirect and/or consequential damages or losses, including loss of use, revenue, profit incurred by the client, its customers and/or any third party as a result of the use of the work carried out by SEM Inc. for the client, including any loss resulting from equipment failure or malfunctions, design or programming errors or any other use of the work carried out in this contract. The client specifically waives any claim or recourse it may have against SEM Inc. in any of the above instances.

SEM Inc.'s obligation under this warranty is limited to correcting, or at its option replacing, without charge at its factory any equipment, components or parts thereof which are returned to its factory (transportation charges prepaid) within one year after date of invoice, examination of which disclose to SEM Inc.'s satisfaction that the equipment, components, or parts thereof were originally defective.

Any changes in design or improvements added to the line of equipment shall not create any obligation to upgrade or modify equipment previously sold and delivered to the client.

Any unauthorized alteration of, or addition to, articles of the contractors manufacture voids this warranty.

Equipment or components returned for Warranty repair must be accompanied by a copy of the original invoice as verification of purchase date. Equipment or components returned without a copy of original invoice will be charged to the customer at the regular repair rates.

This manual was written by our technical department. Even though the utmost attention was given to writing this manual, errors may have slipped by unnoticed. Any comments, suggestions, or errors should be sent directly to:
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